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# FOREIGN AGRICULTURE REPORT

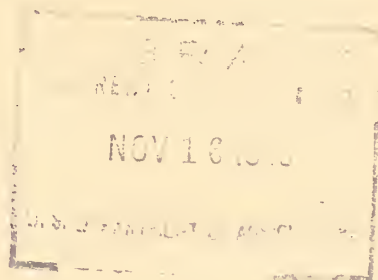
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## OBSERVATIONS ON THE VEGETABLE OILS SITUATION IN CERTAIN COUNTRIES OF EUROPE AND IN SOURCE AREAS OF AFRICA

*By*

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## A C K N O W L E D G M E N T

The author wishes to express his appreciation to the foreign service officers in the countries surveyed who cooperated by making arrangements, supplying data, and otherwise facilitated the completion of this study. He also wishes to express his appreciation to the employees of the trade in Europe and Africa for their cooperation in supplying information on oilseed operations in the areas surveyed. Special assistance in the preparation of statistical data and in the checking and editing of this manuscript was rendered by Monroe McCown, Paul E. Quintus, and Olav F. Anderson of the Office of Foreign Agricultural Relations.



Figure 1.--Dakar, French West Africa. Peanut oil in drums awaiting shipment. Unprocessed peanuts in the background.





Figure 2.--Kongwa, British East Africa. Clearing brush before planting peanuts.

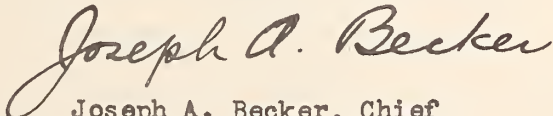


## FOREWORD

The loss of prewar sources of oilseeds and vegetable oils and the need for husbanding dollar resources has caused many European countries to increase the domestic production of oilseeds and look to African areas for an increasing share of their requirements of these commodities. Since European markets are important outlets for oilseeds produced by farmers of the United States, this survey was conducted in the latter part of 1948 for the purpose of obtaining first-hand information concerning developments in some of the European countries and in colonial and other areas of Africa to aid in appraising foreign outlets for United States products.

This report summarizes the personal observations of Mr. Howard A. Akers, Marketing Specialist of the Fats and Oils Branch, Production and Marketing Administration, who conducted the study for this Office. In the course of his 4-month's survey, Mr. Akers visited the United Kingdom, France, Belgium, the Netherlands, and Denmark in Europe and the Union of South Africa, British East Africa, Nigeria, Angola, the Belgian Congo, French Equatorial and French West Africa, and Liberia.

The study was conducted under the provisions of the Research and Marketing Act of 1946. The possibilities for broadening the foreign market for other agricultural commodities are also under study, and the findings are presented in other reports and circulars which can be obtained free from the Office of Foreign Agricultural Relations, U. S. Department of Agriculture, Washington 25, D. C.



Joseph A. Becker, Chief  
International Commodities Branch

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Summary and Conclusions

In 1948, supplies of vegetable oils and animal fats in Europe were below prewar levels of consumption, and a large potential demand for both edible and industrial fats and oils existed. Since the beginning of World War II, processors of vegetable oils and oilseeds have operated at only a fraction of capacity.

The European trade prefers to import oilseeds and process them locally, in order to utilize processing equipment and obtain the byproduct of oilcake for use as cattle feed. However, partly due to the increase in crushing facilities in producing areas, inadequate supplies of raw materials have left a large proportion of Europe's oilseed crushing facilities idle; and the import level of crude vegetable oils has exceeded that of raw crushing materials.

The European countries have allocated their available dollars for the purchase of more urgently needed imports, and since most of them attempt to procure oilseeds outside of dollar areas, there is some resistance to the purchase of oilseeds from North and South America and to the procurement of copra from the Republic of the Philippines.

As a result of these factors, several of these countries have initiated programs to increase oilseed production in their colonial territories.

In 1948, British East Africa--which includes Kenya, Tanganyika, and Uganda--was attempting to increase the production of oil-bearing seeds, particularly peanuts, flaxseed, and sunflower. However, the extent to which the production of these seeds can be increased in this area is limited, and an increasing population was expected to absorb any expansion in production resulting from these efforts. Any potentially large-scale export of oilseeds from this area would seem to depend upon the success of the British Groundnut Scheme which, in 1948, was in operation in Tanganyika only. This peanut program provided for the eventual planting of about 3 million acres to peanuts, but the project has

developed slowly, and only small exports of oilseeds can be expected within the next 2 or 3 years.

The Union of South Africa, which formerly imported large quantities of vegetable oils from India and, during the war, considerable quantities of lard and oil from the United States, has expanded its domestic production of oilseeds. The principal increase has been effected in the production of peanuts and sunflower seed. South Africa hopes to become self-sufficient with respect to fats and oils and may have small quantities of vegetable oils or oilseeds for export within the next few years.

The production of palm oil in the Belgian Congo is expanding rapidly. The area planted to palm trees increased from 154,000 acres in 1938 to 359,000 acres in 1948. Since 94,000 acres of oil palms had not reached maturity and other large acreages were being planted in 1948, the volume of production is expected to increase. The total volume of palm oils produced in the Belgian Congo is not definitely known; however, in 1948, the commercial production was about 165,000 tons, 110,000 tons of which was exported. Approximately half of this production came from oil palm plantations. Palm oils and kernels from the Belgian Congo are marketed through an organization called "Congopalm," made up of producers and traders in palm oil and controlled by the Colonial Government.

New cottonseed processing plants were under construction in the Belgian Congo. These will provide the means of utilizing oilseeds produced in the interior more fully.

The Portuguese Colony of Angola exports appreciable quantities of palm oils and kernels; and efforts to increase the production of other oilseeds, particularly of peanuts and castor beans, were being made. The resources of the area are still largely undeveloped.

In British West Africa, the Colonial Government has encouraged native production of palm oils and other oilseeds, and over 90 percent of the palm oil exported is produced by natives.

The Colonial Government of British West Africa has attempted to bring about an improvement in the quality of oil delivered by native producers and, through a fixed price and an assured market, to increase the volume of oil deliveries. Efforts were also made to promote the use of the hand oil press in the native producing regions and of the small palm-oil mills in some areas. These efforts, if successful, would increase the quantity and improve the quality of palm oil from British West Africa.

The production of peanuts in British West Africa has been encouraged by Government purchases, with the result that deliveries of peanuts exceed the capacity of the railroad to move supplies to port. Improvements in transportation facilities will result in increases in peanut output. The British have plans for a large mechanized peanut project in British West Africa similar to the scheme recently initiated in British East Africa.



All supplies exported from British West Africa are purchased by the Colonial Government at fixed prices. In Nigeria, a fund had been established to stabilize the market for the oils and oilseeds produced in that area.

The economy of French West Africa is largely dependent upon the production and export of peanuts, and this industry contributes materially to France's vegetable oil position, as well. Although the output of peanuts has increased since the end of the war, prewar levels have not been regained. The lack of labor, scarcity of trade goods, and the decline in soil fertility have retarded this recovery. The production of peanuts in the older areas cannot be increased to a great extent under the present methods of operation. The French Government has begun a new, large-scale, peanut project, designed to expand the exportable surplus of peanuts, which would utilize mechanical power. However, even if the projected production is achieved, it is unlikely that the increase in exportable supplies will exceed the requirements of France. Increasing quantities of peanuts are now processed by mills located in French West Africa.

Production and export of palm oils and kernels from French West Africa in 1948 were far below prewar levels. Delivery of oils from native producers was handicapped by the shortage of trade goods and by the inadequate supply of labor. Palm oils from this area are almost exclusively extracted from fruit from native groves, by inefficient native methods. Since about half of the oil is lost when the native extracting method is used, the French are attempting to increase the exportable surplus of palm oils and kernels by building new palm-oil extraction plants that will recover nearly 90 percent. These plants are expected to produce a better quality of oil. It is believed that the French eventually will encourage the development of plantations for the production of palm oil in this area; although, under existing laws, large oil palm plantations are not permitted.

Exportable supplies of palm oils and kernels of French West Africa have been taken by France, and it is likely that future supplies will also go to France.

In Liberia, plans are underway to develop the land resources and increase the volume of the palm-oil production. If these plans materialize, Liberia may someday be in a position to supply palm oils to the United States. Although the quantity of palm oil now produced is unknown, the potential exportable surplus is estimated at from 2,000 to 10,000 tons annually.

By fuller utilization of Africa's resources, a major part of Europe's requirements of peanuts, palm oils and kernels, and certain other vegetable oils could be produced in colonial and other areas of that Continent. Small quantities of copra are now produced, but the coconut has not been widely utilized. The output of castor beans could be increased considerably to supply a part of the drying-oil needs of Europe. The areas adapted to the growth of flaxseed appear to be limited, and a significant increase in this crop is not anticipated.

While Africa cannot meet Europe's requirements of oilseed, larger quantities of vegetable oils will be contributed by this area. It is very likely that the European demand for copra and coconut oil from the Pacific areas and for oilseeds and animal fats from the Western Hemisphere will, thus, be reduced.

### European Countries

Historically, European countries have depended upon imports to fill a large portion of their fats and oil requirements, and large quantities of vegetable oils, oilseed, and animal fats will be imported for some time to come. Since World War II, total imports of fats and oils into western Europe have fallen significantly below prewar levels; and, as a result, this commodity group has been rationed in most countries. In 1948, Europeans believed the shortage of fats and oils would continue for 3 to 8 years.

Western European countries are particularly anxious to increase imports of oilseeds; and most of these countries are equipped to crush quantities sufficient to provide the bulk of their vegetable oil requirements. Byproducts such as oil cake, which is used for stock feed, can be obtained by processing these seeds domestically, and these are greatly needed. In 1938, the imports of oilseeds into the United Kingdom, Belgium, Denmark, the Netherlands, and France approximated 4.7 million short tons, compared with 1.9 million tons in 1947.

Due to the shortage of dollar exchange, western European countries prefer to spend their dollars only for those items considered to be most essential. Since certain of these countries have a cheaper source of oilseeds within their own territories and inasmuch as limited reserves of dollar exchange can be conserved by purchases in these areas, imports from the United States will be made only when absolutely necessary. Imports from non-dollar areas, however, are not yet sufficient to meet European needs.

The fats and oils situations of the United Kingdom, France, the Netherlands, Belgium, and Denmark, as observed in the latter part of 1948, are discussed in the following pages.

### The United Kingdom

The United Kingdom, more than any other European country, depends upon imports of fats and oils to meet its requirements. In 1938, 1.8 million short tons of fats and oils and oilseeds, in terms of oil, were imported, compared with imports of approximately 1.4 million tons in 1947. Although the 1947 total compares favorably with that of 1938, imports of oilseeds declined from 1.8 million tons in 1938 to 1.1 million tons in 1947--a reduction of about 100,000 tons in terms of oil. (See table 1.) The greatest decline, however, took place in imports of butter, margarine, and lard and lard compounds. Total imports of these items, in terms of oil, fell from the 1938 level of 621,000 tons to 260,000 tons in 1947. Imports of crude and refined vegetable oils increased from 215,000 tons in 1938 to 366,000 tons in 1947. The data contained in table 2 indicate the sources of supply for specified oilseeds and the quantities imported into the United Kingdom in 1938 and 1947.



TABLE 1.- United Kingdom: Foreign trade in specified oilseeds and vegetable oils, calendar years 1938 and 1947

COMMODITY	1938		1947	
	COMMODITY WEIGHT	OIL EQUIVALENT	COMMODITY WEIGHT	OIL EQUIVALENT
	Short tons	Short tons	Short tons	Short tons
<b>IMPORTS</b>				
Oilseeds:				
Copra.....	127,313	80,207	142,858	90,000
Palm kernels .....	149,511	67,280	406,513	182,931
Peanuts (shelled) .....	356,413	153,257	279,282	120,091
Peanuts (unshelled).....	9,143	2,925	55,352	17,713
Other nuts .....	7,081	2,832	21,714	8,770
Soybeans .....	110,385	16,558	29,051	4,358
Castor beans .....	35,610	14,956	45,903	19,289
Cottonseed .....	695,005	125,101	39,038	7,026
Flaxseed.....	309,521	92,856	44,990	13,470
Rapeseed .....	23,687	8,290	446	156
Other seeds .....	1,345	403	3,162	949
Total .....	1,825,014	564,665	1,068,309	464,753
Vegetable oils:				
Palm .....		147,246		170,408
Linseed .....		21,092		125,138
Soybeans .....		3,594		2,284
Coconut (unrefined) .....		39,932		68,202
Coconut (refined) .....		2,921		(1)
Total .....		214,785		366,032
Total imports (oil equivalent)..		779,450		830,785
<b>EXPORTS</b>				
Vegetable oils:				
Cottonseed (unrefined).....		8,289		112
Cottonseed (refined) .....		3,408		725
Castor .....		6,878		67
Rapeseed .....		943		(1)
Linseed .....		12,061		167
Coconut, (refined).....		276		(1)
Peanut (unrefined) .....		40,792		874
Other (unrefined) .....		14,492		809
Soybeans (refined) .....		7,172		20
Other (refined) .....		3,669		2,798
Total exports (oil equivalent)..		97,980		5,572
Net import balance (oil equivalent)		681,470		825,213

<sup>1</sup> None reported.  
Compiled from official and trade sources.

TABLE 2.- *United Kingdom: Imports of specified oilseeds by country of origin, calendar years 1938 and 1947*

COMMODITY AND COUNTRY OF ORIGIN	YEAR	
	1938	1947
	<i>Short tons</i>	<i>Short tons</i>
Cottonseed		
British East Africa.....	146,340	17,353
Anglo-Egyptian Sudan .....	112,273	14,597
Other British territory .....	9,504	7,304
Egypt .....	353,143	(1)
Other countries .....	73,744	389
Total .....	695,004	39,643
Peanuts (shelled)		
British West Africa .....	72,798	262,758
British India .....	283,584	13,838
Other British territory.....	(1)	3,389
Other countries .....	31	(1)
Total .....	356,413	279,985
Peanuts (unshelled).....	9,142	55,352
Flaxseed		
British India .....	256,405	44,817
Other British territory .....	151	177
Argentina .....	49,719	(1)
Other countries .....	3,246	28
Total .....	309,521	45,022

<sup>1</sup> None reported.

Compiled from official and trade sources.

The British Government as well as its vegetable oil industry evidenced concern over the world shortage of fats and oils. Probably the most disturbing factor, from the British viewpoint, was an apparent, permanent loss of India as a source of peanuts caused by the small increase in the Indian per-capita consumption of oils during the war years that absorbed most of the Indian production.

Because of the decline in supplies of cottonseed available in Africa and since India could no longer be depended upon as a source of peanuts and flaxseed, Britain sought new sources of supply, preferably outside dollar areas. A program designed to increase the production of oilseeds was initiated in East Africa in 1947. Although experiments for increasing the production of other oilseeds were carried on in East Africa, emphasis was placed on the growing of peanuts. Inasmuch as much British African territory was not considered to be adapted to the growth of flaxseed, a program was introduced in the United Kingdom for planting 400,000 acres to this crop in the home islands by 1951. The goal for 1948 was 150,000 acres, and a total of 84,000 acres was actually planted, from which it was estimated that 47,000 short tons would be produced. Even though the 1948 goal was not reached, the acreage was increased from 11,000 acres in 1946 to 56,000 in 1947 and to 84,000 acres in 1948.

Under this program, the Ministry of Food paid the equivalent of \$248 per short ton of linseed, net weight, basis 90 percent pure; and the growers were entitled to a third of a ton of linseed cake, in addition to the usual ration, for each ton of linseed delivered to the crushers. Although the British officials did not contemplate that home production would be competitive or practicable over a long period of time, this domestic production was considered necessary to alleviate the shortage of supplies of linseed caused by the critical shortage of dollar exchange.

Although official data were not made available, the United Kingdom's annual crushing capacity was indicated to be above 2,000,000 short tons of oilseed, and crushers were operating at about 50 percent of this capacity in 1948. The solvent plants were given preference in allocations of oilseeds and, apparently, operated at capacity. Some expeller-type, but no hydraulic, mills were in operation in 1948. The margarine factories were relatively better off; they were using imported oil and operating at about 80 percent of capacity.

The fats and oils industry of the United Kingdom operates essentially as a Government enterprise. The Ministry of Food purchases supplies by means of contracts with supplying governments and, in most cases, retains title to the products and byproducts through all stages of processing and handling until the various commodities reach the consumer. At the time of this survey, fats, oils, and soap were rationed and sold to consumers at ceiling prices. The commercial processing and distribution was handled through a series of agreements between the Government and the brokers, processors, and distributors. The brokers of one association weighed and graded the purchased materials and collected the income from these products for the Government on a fee basis.



Crushers also acted as a group. Materials were consigned to the most efficient plants; but the plants that were idle received a pro-rata share of the processing fees. The margarine factories and other processing plants also operated on the basis of fees. Traders handled the details of purchases for the Ministry of Food and conducted a significant volume of business, on account, for other countries, also.

### France

France produces most of its requirements of animal fats, and a program designed to increase the domestic output of oilseeds was recently initiated. Although the domestic production of oilseeds in 1948 was officially estimated at 168,000 short tons, only a small portion of France's oil needs could be supplied by this output. In 1939, France imported about 1,377,000 tons of oilseeds having an oil equivalent of approximately 549,000 tons. (See table 3.) In 1947, only 492,000 tons of oilseeds with an oil equivalent of 238,000 tons were imported, and the net imports of both oils and the oil equivalent of oilseeds amounted to about 298,000 tons in that year, compared with a net import of 514,000 tons in 1939. About half of the oilseeds imported by France before the war came from her colonies. These imports included an average of approximately 700,000 tons of peanuts (basis shelled), about 200,000 tons of which came from India; 50,000 tons, from Nigeria; and the remainder, from French West Africa. Imports of linseed ranged from 200,000 to 300,000 tons a year.

Most of the French crushing facilities are located in, or near, Marseille. The annual crushing capacity was estimated at about 1.6 million tons of oilseeds, although prewar crushings did not exceed 1.3 or 1.4 million tons. Since oilseed supplies were reduced during the war, crushings dropped to less than 100,000 tons but rose to nearly 500,000 tons in 1947. Nearly 1 million tons of the crushing capacity was equipped to process by the solvent extraction method, which leaves an average of 0.8 percent of oil in the cake, and most of the remaining capacity was equipped with the screwtype press. Although the installation of hydraulic presses in France was illegal at one time, some hydraulic presses were used to process copra and palm kernels.

France has a margarine-producing capacity of approximately 100,000 tons annually, of which about 30 percent is located in Marseille. The 1939 production of margarine was about 51,000 tons and, after a decline to less than 9,000 tons during the war, it increased each year, reaching a level of about 57,000 tons in 1947. During the war, beef fat became an important constituent of margarine. In 1948, margarine was again manufactured almost entirely from vegetable oils, as it was prior to the war.

The soap factories of France, which produced about 260,000 tons of soap annually before the war, operated at about 30 percent of capacity in 1948. This industry has recovered slowly, due to the drastic shortage of available fats and the need for minimum quantities of fats and oils for edible purposes.



TABLE 3.-France: Foreign trade in oilseeds and vegetable oils,  
calendar years 1939 and 1947

COMMODITY	1939		1947	
	COMMODITY WEIGHT	OIL EQUIVALENT	COMMODITY WEIGHT	OIL EQUIVALENT
	<i>Short tons</i>	<i>Short tons</i>	<i>Short tons</i>	<i>Short tons</i>
<b>IMPORTS</b>				
Oilseeds:				
Copra .....	154,653	97,431	167,026	105,226
Peanuts (shelled) .....	478,775	205,873	197,447	84,902
Peanuts (unshelled) .....	415,604	132,993	59	20
Flaxseed .....	191,732	57,319	12,117	3,635
Sesame .....	1,246	560	2,866	1,323
Mustard .....	5,185	1,762	551	220
Palm kernel .....	86,528	38,938	74,854	33,684
Castorbeans .....	24,457	10,271	11,023	4,630
Soybeans .....	7,726	1,159	19,335	2,900
Other .....	11,130	3,339	7,165	2,094
Total .....	1,377,036	549,645	492,443	238,634
Vegetable oils:				
Olive .....		19,478		1,196
Palm .....		32,835		6,891
Coconut, palm kernel and illipe .....		1,039		1,427
Linseed .....		118		37,816
Cottonseed .....		256		1,516
Peanut .....		1,253		5,108
Soybean .....		50		8,394
Total as oil .....		55,029		62,348
Total imports (oil equivalent) .....		604,674		300,982
<b>EXPORTS</b>				
Oilseeds:				
Peanuts (unshelled) .....	2,424	776	(1)	(1)
Peanuts (shelled) .....	416	179	(1)	(1)
Flaxseed .....	128	38	659	198
Other seed .....	503	151	15	5
Total .....	3,471	1,144	674	203
vegetable oils:				
Olive .....		15,219		499
Palm .....		80		(1)
Coconut .....		6,389		1,247
Castor .....		1,968		(1)
Linseed .....		6,162		708
Peanuts .....		56,588		14
Soya and sesame .....		2,510		(1)
Rapeseed .....		276		(1)
Total, as oil .....		89,192		2,468
Total export (oil equivalent)		90,336		2,671
Net import balance (oil equivalent) .....		514,338		298,311

1 None reported

Compiled from official and trade sources.

Only small quantities of oilseeds were produced in France prior to the war; and, except for the domestic production of butter, lard, and tallow, the country was almost wholly dependent upon imports of fats and oils. Since the war, however, production of oilseeds has increased greatly, as indicated by data contained in table 4.

TABLE 4.--France: Acreage and production of oilseeds, calendar years 1938, 1947, and 1948

Oilseed	1938		1947		1948	
	Acreage	Production	Acreage	Production	Acreage	Production
	Acres	Short tons	Acres	Short tons	Acres	Short tons
Colza-----	19,019	9,562	101,746	35,397	188,216	107,130
Poppy-----	210	90	13,511	3,178	11,458	3,782
Navette-----	5,570	2,086	40,386	6,146	38,150	10,840
Sunflower-----	1/	1/	20,396	6,335	19,279	8,145
Other-----	1/	1/	170,118	42,458	135,337	38,929

1/ None reported.

Compiled from official and trade sources.

The French Government offered many incentives to encourage farmers to increase their production of oilseed. Accordingly, the French output is expected to total about 300,000 tons per year, or the equivalent of about 100,000 tons of oil, by 1952. The increased production is expected to come largely from Colza produced in the northern region, above the Seine.

Oilseeds produced in France were purchased by the Government, under its price-support program, although the commodity was actually handled by mills acting under Government direction.

Purchases from foreign sources were made by a semi-official agency known as "GNAPO," which was comprised of members of the oil trade; and the raw materials were sold by the agency to processors. Ceiling prices were established on end products, and this action, in effect, set the processor's margin.

After 1952, it is probable that France will be dependent upon purchases of from 150,000 to 250,000 tons of vegetable oil annually in the world market, the exact amount depending upon the success of the schemes to increase production at home and in the French colonies. Until 1952, the French import needs will exceed these figures.

## The Netherlands

Holland, like the other European countries visited, prefers to import oilseeds, rather than oil and cake. Since the Dutch had about 1.3 million head of cattle, prewar, and only slightly less at the end of the war, there was a tremendous demand for oil cake. Even before the war, when imports of oilseeds were relatively large, 250,000 to 300,000 tons of oil cake were imported annually.

The total consumption of fats and oils in the Netherlands in 1947, in terms of oil, was approximately 94,000 short tons, for edible purposes, and about 63,000 tons, for technical uses. In 1948, Dutch officials indicated that imports of from about 25,000 to 30,000 short tons of linseed and about 35,000 to 40,000 tons of oil would be required each year.

The Dutch are trying to increase home production, and, in 1947, 1,700 acres of rapeseed, 25,900 acres of flaxseed, and 1,400 acres of poppyseed were planted. This acreage increased to 31,000 acres of rapeseed, 36,400 of flaxseed, and 14,300 acres of poppyseed in 1948.

Besides increasing the domestic production, the Dutch were attempting to increase the colonial output of oilseeds; however, they were not overly optimistic about the prospects for success in colonial areas and indicated that they do not expect to control exports from Indonesia, even when the political situation there is stabilized.

Before the war, Rotterdam and Amsterdam were important oil-crushing and -processing centers. In 1948, the crushing capacity of the Netherlands was estimated at about 1 million tons annually, of which 20 to 30 percent was processed by the solvent-extraction method. The remainder was processed by hydraulic or expeller equipment. Although these plants crushed about 750,000 short tons of material annually before the war, most of them were idle during 1948.

Approximately 800,000 short tons of oilseeds and about 69,000 tons of vegetable oils were imported by the Netherlands in 1938. (See table 5.) Of this total, approximately 17,000 tons of oilseed and about 126,000 tons of vegetable oils were reexported. In 1947, only 196,000 tons of oilseeds and approximately 37,000 tons of vegetable oils were imported. About 19,000 short tons of seeds and oil, in terms of oil, were exported.

Dutch crushers processed about 300,000 tons of linseed annually before the war, all of which was reexported, except about 30,000 tons of linseed oil. The Netherlands must regain its prewar sources of oilseed supplies before its crushing industry can be restored.

The manufacturing capacity of the Netherlands is sufficient to process more than 110,000 tons of margarine annually. Before the war, Holland produced about 77,000 tons of margarine, and the output increased to nearly 88,000 tons



TABLE 5.- The Netherlands: Foreign trade in oilseeds and vegetable oils, calendar years 1938 and 1947

COMMODITY	1938		1947	
	COMMODITY WEIGHT	OIL EQUIVALENT	COMMODITY WEIGHT	OIL EQUIVALENT
	Short tons	Short tons	Short tons	Short tons
<b>IMPORTS</b>				
Oilseeds:				
Peanuts (shelled).....	166,898	71,758		
Peanuts (unshelled).....	28,872	9,239	8,377	2,680
Linseed.....	328,582	98,575	15,763	4,729
Rapeseed .....	7,418	2,596	(1)	(1)
Soybean .....	121,256	18,188	8,708	1,306
Sunflower .....	17,677	5,303	(1)	(1)
Sesame .....	6,943	3,124	1,213	545
Copra .....	58,573	36,901	162,038	102,084
Palm kernel .....	53,646	24,141	110	50
Hempseed .....	9,610	2,883	(1)	(1)
Total .....	799,475	272,708	196,209	111,394
Vegetable oils:				
Cottonseed.....		836		5,071
Rapeseed .....		185		4,850
Soybean .....		13,509		7,606
Sunflower .....		121		1,102
Castor .....		584	(1)	
Coconut .....		8,615		661
Palm kernel .....		71	(1)	
Palm.....		44,606		4,079
Peanut .....		280		1,213
Other (including some animal fat)...		(1)		12,015
Total.....		68,807		36,597
Total imports .....		341,515		147,991
<b>EXPORTS</b>				
Oilseeds:				
Linseed .....	6,219	1,866	5,181	1,554
Rapeseed .....	5,336	1,867	(1)	(1)
Poppseed .....	5,085	2,440	4,630	2,222
Other .....	(1)	(1)	1,213	364
Total .....	16,640	6,173	11,024	4,140
Vegetable oils:				
Linseed .....		84,665		331
Soybean .....		4,903		(1)
Sunflower .....		284		(1)
Sesame .....		4,987		(1)
Castor .....		308		(1)
Coconut .....		16,670		12,236
Palm kernel oil .....		7,554		(1)
Palm oil .....		2,415		(1)
Corn .....		3,087		(1)
Other .....		1,217		2,315
Total .....		126,090		14,882
Total exports .....		132,263		19,022
Net import balance.....		209,252		128,969

<sup>1</sup> None reported.

Compiled from official and trade sources.



in 1947. This margarine production and an estimated 57,000 tons of butter made it possible to distribute 250 grams of fats weekly to the average consumer in 1947, compared with a per-capita consumption of 310 grams before the war.

Imports of oilseeds were controlled through Government purchases. When an allocation for imported materials was made, brokers and importers, operating on commission, offered materials to the Netherlands Government for delivery at Netherlands ports.

### Belgium

Supplies of palm oil and palm kernels from the Belgian Congo were sufficient to enable the Belgians to meet their most urgent requirements, with the result that fats were removed from ration control in Belgium in 1948. However, these products were subject to ceiling prices. Both palm oil and palm-kernel oil were being used to produce margarine, and the primary need was for peanut, soybean, and cottonseed oils. Despite its comparatively favorable position, Belgium's imports of oilseeds and oils were far below prewar levels. In 1938, Belgium imported about 305,000 short tons of oilseeds and about 41,000 tons of vegetable oils. (See table 6.) The oilseeds were processed and 24,000 tons of oil, as such, were exported. Belgium's prewar net-import balance amounted to the equivalent of about 131,000 tons of vegetable oils.

In 1947, Belgium imported 95,000 tons of oilseeds, primarily in the form of palm kernels from the Belgian Congo, and approximately 90,000 tons of vegetable oils. Some flaxseed was retained for planting purposes, and 4,850 tons of oil was exported. The net import balance, in oil equivalents, in 1947 was therefore around 133,000 tons of oil, slightly exceeding the prewar level. While net imports of oil, as compared with prewar figures, had increased, Belgian crushing plants were operating at less than 50 percent of capacity because of decreased imports of oilseeds. Linseed crushing plants, which were operated separately from the mills producing edible oils, had an annual crushing capacity of about 200,000 tons and crushed from 80,000 to 125,000 tons annually during the prewar period. The mills used German equipment of either hydraulic or expeller type. The crushers equipped to process liquid edible oils had a crushing capacity of 300 tons of raw materials daily; but, in 1948, most of these plants were idle. The mills for processing palm kernels and those for processing liquid edible oils used solvent-type equipment. During the war, the Germans purchased some of the Belgian oil mills and moved them from Belgium. These plants have not been replaced, since there has been no need for additional crushing capacity.

Although a large part of the raw materials imported by Belgium came from the Belgian Congo, some products and raw materials were purchased from other countries. All imports were made by the Government through an association of brokers and dealers called "OLGRA." Once an import allocation was set up, the association was notified and its members obtained bids on the commodity.

TABLE 6.- Belgium: Foreign trade in oilseeds and vegetable oils,  
calendar years 1938 and 1947

COMMODITY	1938		1947	
	COMMODITY WEIGHT	OIL EQUIVALENT	COMMODITY WEIGHT	OIL EQUIVALENT
	Short tons	Short tons	Short tons	Short tons
<b>IMPORTS</b>				
Seeds:				
Peanuts (shelled).....	78,500	33,755	(1)	(1)
Peenuts (unshelled) .....	19,309	6,179	19,180	6,137
Linseed .....	94,609	28,383	1,102	331
Repeseed .....	5,630	1,970	(1)	(1)
Soybeans .....	24,302	3,645	(1)	(1)
Sunflower .....	3,938	1,181	(1)	(1)
Cottonseed .....	390	58	(1)	(1)
Copre .....	25,734	16,212	10,472	6,597
Palm kernel .....	32,239	17,731	61,067	34,077
Cestorseed .....	12,747	5,354	2,976	1,249
Other .....	7,245	2,174	661	198
Total .....	304,643	116,642	95,458	48,589
Vegetable oils:				
Cottonseed .....		719		2,205
Rapeseed .....		140		772
Soybeans .....		7,701		6,834
Castor .....		247		441
Coconut .....		207		1,323
Palm .....		19,076		56,658
Peenut .....		8,547		1,102
Linseed .....		456		12,787
Maize .....		76		220
Olive .....		526	(1)	
Other .....		3,107		7,275
Total .....		40,802		89,617
Total imports (oil equivalent).....		157,444		138,206
<b>EXPORTS</b>				
Seeds (mostly for seed).....	8,355	2,506	2,535	760
Vegetable oils:				
Linseed.....		7,129		551
Repeseed .....		920	(1)	
Soybeans .....		117	(1)	
Cestor .....		4,765		220
Corn .....		3,185		331
Palm .....		7,148		1,874
Other .....		856		1,874
Total oil .....		24,120		4,850
Total exports (oil equivalent).....		26,626		5,610
Net import balance (oil equivalent)		130,818		132,596

<sup>1</sup> None reported.

Compiled from official and trade sources.



When a bid was accepted, the association was paid by the Government, following receipt of the documents. The commodity was then resold to the association and the raw materials were directed to specified crushers and processors. By fixing the prices to consumers and by directing the flow of supplies to the industry, the Government, in effect, fixed the spread for each operation.

### Denmark

In 1948, Denmark's position with respect to oilseeds, as compared with that of the other European countries visited, was very unusual. The inability to obtain oilseeds affected the vegetable-oil industries adversely, and production of animal fats was decreased as a result of the limited supplies of oilseed cake. In addition, Denmark was one of the few countries that had no colonies to furnish oilseed.

Before the war, the Danes imported large quantities of oilseed for crushing purposes. The oil produced was used in the manufacture of margarine for domestic use, and the oil-meal byproduct was fed to dairy cattle to produce butter. The skimmed milk left from butter production was used to feed hogs, and appreciable quantities of lard were obtained. A large part of the butter and lard production was exported.

Imports of oilseeds into Denmark in 1938 totaled 398,000 short tons. (See table 7.) In addition, about 7,000 tons of vegetable oils were imported. In 1947, imports of oilseeds amounted to only 61,000 tons, and imports of vegetable oils totaled 7,000 tons. The net import of vegetable oil and oilseed, in terms of oil, was 95,000 tons in 1938, compared with approximately 37,000 tons in 1947. The net import of fish oil, lard, whale and other oils--mostly whale oil--was about 33,000 tons in 1938 as compared with approximately 5,000 tons in 1947. The net balance of imports of oil cake in 1938 was between 600,000 and 700,000 tons, compared with 200,000 tons in 1947.

The decrease in imports disrupted normal trade and the per-capita consumption of edible fats and oils declined from approximately 66 pounds, prewar, to about half the prewar figure in 1948. Per-capita allotments of soap in 1948 were also less than half those of prewar.

Denmark had endeavored to increase the domestic production of oilseed to partially replace her loss in imports. Approximately 741,000 acres of land would be required to offset imports of oilseeds received during the prewar period, and the Agricultural Council believed it to be economically impracticable to produce oilseeds in Denmark. Consequently, after the world shortage of fats and oils is alleviated, it is planned to place more reliance upon imports of oilseeds.

The areas planted to flaxseed and mustard seed in the years 1941 through 1948 fell to the lowest point in 1946. (See table 8.) Flaxseed acreage in



TABLE 7.- Denmark: Foreign trade in oilseeds and vegetable oils,  
calendar years 1938 and 1947

COMMODITY	1938		1947	
	COMMODITY WEIGHT	OIL EQUIVALENT	COMMODITY WEIGHT	OIL EQUIVALENT
<b>IMPORTS</b>	<i>Short tons</i>	<i>Short tons</i>	<i>Short tons</i>	<i>Short tons</i>
<b>Oilseeds:</b>				
Peanuts (shelled) .....	14,188	6,101		
Peanuts (unshelled) .....	24,552	7,857	1,154	369
Cottonseed .....	12,822	1,923	(1)	(1)
Flaxseed .....	18,597	5,576	4,574	1,372
Soybeans .....	209,213	31,381	2,239	336
Sunflower .....	1,207	362	5	(1)
Sesame .....	7,556	3,400	435	198
Copra .....	83,012	52,298	50,178	31,612
Palm kernels .....	26,977	12,140	2,545	1,145
Total .....	398,124	121,038	61,130	35,032
<b>Vegetable oils:</b>				
Soybean .....		948		3,440
Coconut .....		4,019		85
Palm oil .....		964		(1)
Other .....		1,074		3,334
Total .....		7,005		6,859
Total Imports (oil equivalent) .....		128,043		41,891
<b>EXPORTS</b>				
<b>Oilseeds:</b>				
<b>Vegetable oils:</b>				
Soybean .....		9,062		11
Coconut .....		9,231		4,181
Sunflower .....		111		(1)
Sesame .....		768		(1)
Palm kernel .....		3,727		(1)
Peanut .....		9,944		138
Total export (oil equivalent) .....		32,843		4,330
Net Import balance (oil equivalent) .....		95,200		37,561

<sup>1</sup> None reported.

Compiled from official and trade sources.

1943, the highest in 8 years, was more than 6 times as great as the average for the years 1941-45. Mustard seed acreage, however, was still appreciably less in 1948 than the area planted in 1942 or 1943.

TABLE 8.--Denmark: Acreage and yield rates of flaxseed and mustard seed, annual 1941-48

Year	Flaxseed		Mustard seed	
	Acreage	Yield per acre	Acreage	Yield per acre
	<u>Acres</u>	<u>Bushels</u>	<u>Acres</u>	<u>Pounds</u>
1941-----	8,401	9.6	19,520	580
1942-----	8,896	14.8	44,478	693
1943-----	6,622	17.0	42,501	813
1944-----	9,143	17.4	37,559	789
1945-----	6,425	22.5	32,617	749
1946-----	2,965	15.9	18,780	696
1947-----	22,239	19.1	35,582	680
1948-----	49,420	--	37,065	--

Compiled from official and trade sources.

The Danes were also striving to increase the quantities of butter exported. From 1934 through 1939, Denmark produced approximately 200,000 tons of butter annually, of which about 165,000 tons were exported and the balance was consumed domestically. In 1947, about 138,000 tons of butter was produced, of which Denmark exported 96,000 tons and consumed 42,000 tons. The Danes reported that all of the butter produced during the war was consumed in Denmark since there was little margarine for home consumption.

During the prewar period and since the end of the war, the value of butter exports has represented about a quarter of the total value of all exports from Denmark. Like the Netherlands, Denmark has the mill capacity to produce over 100,000 tons of margarine annually. In prewar years, more than 88,000 tons of margarine were produced, as compared with an estimated 29,000 tons in 1947.

The annual crushing capacity in Denmark was about 730,000 tons of oilseeds, of which about half was extracted by the solvent method. The remaining capacity is largely dependent upon hydraulic presses, approximately half of which is in operable condition. In 1947, the plants were operated at about 20 percent of the prewar rate and at about 10 percent of capacity.

Purchases of oils and oilseeds were made through commercial channels in Denmark. While the Government did not control the purchase price, it limited the price at which the commodity was sold to consumers.

### African Countries and Colonies

The world's average annual export of oilseed, in terms of oil, in the prewar years 1935-39 is estimated at 4,951,000 short tons, 1,136,000 tons of which came from Africa. In 1947, world exports approximated 2,886,000 tons, of which about 894,000 tons came from Africa. Thus, Africa furnished less than a fifth of the total world exports in the 1935-39 period and contributed a third of the total in 1947, although absolute quantities exported from Africa in 1947 were less than those of the prewar period.

Peanuts, palm oils, and palm kernels, in terms of oil equivalents, comprised by far the dominant share of the oilseed and vegetable oil exports from Africa in prewar years as well as in 1947. (See table 9.) In 1935-39, these made up 85 percent of the exports; and, in 1947, when they were of relatively greater importance, they comprised 92 percent.

TABLE 9.--Africa: Exports of oilseeds and vegetable oils, in terms of oil, calendar years, average 1935-39, annual 1947

Oilseed	Average 1935-39	1947
	Short tons	Short tons
Peanut-----	354,580	290,725
Palm-----	276,800	257,000
Palm kernel-----	333,200	273,400
Cottonseed-----	100,900	25,900
Copra-----	47,800	33,100
Sesame-----	18,400	9,600
Castor bean-----	4,400	4,550
Total oil equivalent-----	1,136,080	894,275

Compiled from official and trade sources.

Although final export figures for 1948 were not available, it was indicated that exports from Africa in 1948 would exceed exports for 1947 by approximately 20 percent.



African oilseed products, for the most part, will compete directly with the United States surplus output of oilseeds, vegetable oils, and fats in the European market. However, the United States also purchases some vegetable oil from Africa, and imports of palm oil into this country for use by the steel industry totaled 18,900 tons in 1946 and 31,600 tons in 1947. All of this palm oil came from Africa.

Countries that possess colonies in Africa usually purchase oilseed from the colonies at less than the world market price. The natives producing oilseeds, for the most part, require only a few pieces of cloth each year for clothing and very little food that is not produced at home.

The wage paid the native is equivalent to about 25 to 50 United States cents per day. Yields per acre of oilseeds, such as peanuts, soybeans, and flaxseed in Africa compare favorably with yields in the United States. The yield of oil on the palm plantations ranges from 900 to 1,000 pounds per acre, along with about 300 pounds of palm kernels yielding about 45 percent oil.

The situation in British East Africa, the Union of South Africa, the Belgian Congo, French Equatorial Africa, Angola, British West Africa, French West Africa, and Liberia is described in the following pages.

#### British East Africa

British East Africa exports some cottonseed, sesame, copra, sunflower seed, and castorbeans. Before the war, exports of cottonseed amounted to approximately 111,000 tons annually. These exports, which came principally from Uganda, were practically discontinued during the war, primarily as a result of the decline in cotton production. The domestic requirement of cottonseed oil has increased due to the growth in population and the improved standard of living, and larger quantities of meal are used as cattle feed. Exports of other oilseeds from British East Africa have always been insignificant.

In British East Africa, there was a general interest in increasing the production of oilseeds. In 1948, attention was centered on the ambitious peanut-development program initiated by the United Kingdom, although schemes for increasing the production of oilseeds on the large commercial farms of Kenya and on farms operated by natives in all three of the East African territories were also reported.

The area comprising British East Africa, which lies along the central east coast of the African continent, is comprised of Tanganyika, Kenya, and Uganda. In Kenya--a British colony--agricultural production on a commercial scale is largely in the hands of European farmers, and any expansion would be made by them. In Uganda--a protectorate--this production is largely in the hand of African natives. Tanganyika is controlled by the United Kingdom under a United Nations trustee arrangement. The population there has increased rapidly, due to

migrations from India and from Europe; and farmers anticipate an expansion of the local market for their products as a result of this growth in population.

While expansion of production by commercial and native farmers was expected to increase the output of sunflower seed, peanuts, sesame, flaxseed, and other oilseeds, the rapid increase in population will probably result in the use of greater quantities for domestic consumption. For this reason, exports of oilseeds from the area were expected to increase very little, except from that portion of the peanut production which may become available as a result of the Groundnut (peanut) Scheme. Because of difficulties encountered in getting the Groundnut Scheme under way, exports of peanuts from this source were not expected to be significant until after 1951 or 1952. The land was being brought under cultivation at a rate slower than was originally anticipated, and a large proportion of the peanuts produced in the first few years was expected to be required for seeding an expanding acreage.

Farmers in Kenya were particularly interested in mechanization and more than 600 were on the waiting list for American-made tractors. Only 140 tractors were in prospect for delivery in 1948 and, to a certain extent, the expansion of production awaited the delivery of new equipment.

Although Kenya depends largely upon imports for its supplies of oils and oilseeds, the increased production of flaxseed, sesame, sunflower seed, and peanuts was being encouraged. In 1947, the Territory introduced a flaxseed production program. Seed was available for only 372 acres, and all of the seed harvested from the initial acreage was issued for planting in 1948. A yield of 700 to 800 pounds of flaxseed per acre was expected from the 7,500 acres planted in 1948. Any surplus was to be sold to the British Ministry of Food at the equivalent of \$234 per short ton. Farmers receive approximately \$4.74 per bushel. The Agricultural Board of the Colony assured growers of a market for all of the seed they produced for the next 5 years, and, in 1949, production is expected to double that of 1948.

Plantings of sunflowers totaled 3,200 acres in 1947. The sunflower seed from this acreage was purchased by the British through the Kenya Farmers' Association at the equivalent of about \$121 per short ton. The farmers' price was set at \$5.59 per hundred pounds or \$112 per ton. Although the crop is well adapted to conditions in Kenya and is popular with farmers, any great expansion in acreage that would effect a decrease in the production of food will be discouraged. Consequently, no large expansion of sunflower production was expected.

Peanuts and sesame are grown primarily by native cultivators in Kenya, and much of the production is used by the growers. In 1947, 1,600 tons of sesame seed was produced, nearly all of which was utilized domestically. The production of peanuts amounted to about 3,000 tons, of which 1,600 tons were purchased by the Control Board and crushed into oil and meal for local consumption. Kenya has imported both sesame and peanuts from Tanganyika and Uganda to meet domestic needs. Little increase in production by native cultivation was expected, and no exports can be made unless these crops are grown by the European cultivators.



Butter production in Kenya increased from about 1 million pounds in 1932 to more than 6 million pounds in 1947. Of the 1947 output, 2.8 million pounds was exported--nearly all of which went to other East African territories.

Tanganyika produces copra, cottonseed, peanuts, sesame, and some castor beans and sunflower seed. Efforts to stimulate the production of sunflower seed by natives were so successful that exports of 3,000 tons to Britain were expected in 1948. Most of the export trade in the area was handled by Indian merchants. They bought oilseeds from the natives by the bag, and concentrated these purchases into lots of about 10 tons each for sale to exporters. In most cases, purchases for export were made for the account of the British Ministry of Food.

The Groundnut Scheme.--The original plan called for 107 plantations of 30,000 acres each in Tanganyika, Northern Rhodesia, and Kenya. All operations were to be mechanized, and it was anticipated that a total of 60,000 tons of peanuts could be produced by 1952 and that, when full production was reached, the annual output would be about 800,000 tons. This, it was figured, would supply more than one-third of the British need for fats and oils.

In February 1947 the Scheme got under way, and approximately 7,000 acres were planted to peanuts at Kongwa, in Tanganyika, which is about 240 miles from the port of Dar-es-Salaam. In September 1948, the brush had been flattened on about 55,000 acres of land, and this was either laid in windrows, ready for burning, or it had already been burned. The roots had been taken out of the ground on approximately 25,000 acres, which were ready for planting.

According to the September 1948 plans, peanuts were to be planted on about 25,000 acres in December 1948 and January 1949, and, if the agricultural director decided to plant sunflowers on land that had not been rooted, another 25,000 acres were to be planted to the latter crop.

At the project at Urambo, Tanganyika, approximately 5,000 acres of land had been cleared and these were to be planted in December and January.

From the beginning, the British have had a great many difficulties with the Groundnut Scheme. First, the port at Dar-es-Salaam was not equipped to handle the huge quantities of materials that were needed to get the project under way. Second, when the supplies and equipment were landed, ground transportation between Dar-es-Salaam and Kongwa was inadequate for moving them out to the project. Third, it was impossible to get any new equipment of the type needed when the project was begun. United States and British Army war-surplus equipment was all that was available. Most of it came from the Philippine Islands and did not arrive in appreciable quantity before July.

When the equipment finally came, some of the tractors were not in condition to operate, and others were used only a few months before they had to be overhauled. The agricultural director of the project stated that of the first



350 track-type tractors that arrived in Dar-es-Salaam, approximately 90 percent moved from the port under their own power, but that by November only 10 were still in operation. The British found it necessary, therefore, to construct repair stations and completely overhaul most of these tractors. In addition to all these problems, the equipment, not originally adapted to land-clearing operations, was converted to usefulness with great difficulty.

From the start it was evident that the project, because of its location, would have to be operated on a large scale. The area was infested with the tsetse fly, which lives only where there is brush and which carries the germ that causes the dread sleeping sickness. It would have been extremely hazardous to move a large group of natives and whites into an infested area. And only by clearing a huge tract of land could the area be rid of this fly.

In order to hasten the development, the British undertook the risk of developing this large acreage without the benefit of previous experiments in land clearing and cultivation under conditions peculiar to this tropical area. Under normal conditions, a small-scale experiment might have been desirable and might have resulted in more efficient operations. However, since only 1-1/2 percent of the total area planned for production had been cleared in September 1948, the experience thus far gained can be used advantageously.

The area under development goes through three stages of preparation. The first stage is a relatively easy one. The brush, which is similar to the mesquite of the southwestern part of the United States, is flattened by large tractors and bulldozers. It is then windrowed, left until dry, and burned. The large Boabab trees, which are fairly numerous, were pushed over, too, at the outset, but they were so bulky that it was difficult to put them in windrows. The trees are now left standing because some of the native chieftains objected to their destruction--their dead were at one time buried in them.

In the second stage, a difficult one, the roots are cleared out. First the roots are cut and pulled out of the ground with a heavy root ripper, and then put in windrows to burn. This operation has been carried out with difficulty because the root cutters available have not been very effective on the roots of the bush and the pulling equipment is too light. A new cutter had been designed but had not been put into use in September 1948. It had also been impossible to get equipment that was heavy enough to pull the roots out of the ground without great difficulty. At Kongwa, 800 heavy tractors, all surplus equipment from the war, were being used, and at Lindi, another planting area in Tanganyika, there were 5 new heavy crawler tractors that may prove to be more effective and 26 Shervek tractors, which were made from Sherman tanks. The latter, however, had not been tested for these purposes.

In the third stage of land development, the ground is plowed and planted. For this job, too, most of the operational equipment was too light. Heavy plows had to be used in front of the usual equipment. Much of the soil is hard, and even after the ground had been cultivated a year, it had a tendency to revert to its original condition. The equipment for the farming operations,

similar in size and design to that used in the United States, probably will be satisfactory when the land is in proper condition. The tractors, planters, diggers, side-delivery rakes, and disks used for planting operations and soil preparation were purchased new from an American firm. Until the land is in better condition, there is more of this equipment on hand than can be used.

In 1947, the land was not in proper condition for planting. It was felt, however, that a year's experience in operating on a relatively large scale would be desirable in planning future operations. Consequently, 7,000 acres were planted and these yielded about 500 pounds of shelled peanuts per acre, despite the poor condition of the land. Test plots were also established on each type of soil in order to determine the yield on carefully prepared ground. Yields on these plots averaged more than 750 pounds per acre. This was the estimate of the annual production that would be forthcoming from the completed project.

Although the original plan called for setting up peanut plantations in Kenya, Rhodesia, and Tanganyika, in September 1948 officials stated that they planned to concentrate their efforts on 3 projects in Tanganyika--15 30,000-acre units at Kongwa, 10 at Urambo, and 55 at Lindi.

In September 1948, work on three of these 30,000-acre farming units had begun at Kongwa, and tracer roads for the entire project had been completed. The first unit was located in the bush areas; the second, mostly in open country which needed only to be plowed; and most of the third unit was located in the brush, and the work here was not far advanced. Not all of this land will be planted to peanuts. Sorghum and sunflowers will be planted on some of it because of their high yields and because they can be harvested with a combine and the stalks turned back to the soil. The stalk is needed to add organic matter to make the soil more friable. Experiments are also being made with Indian corn, niger, and other plants.

The next area being developed is at Urambo in the northwest part of Tanganyika, south of Lake Victoria. In this area, land-clearing and -breaking operations were already under way in 1948.

The third and largest area planned for immediate development is at Lindi, in the southeastern part of Tanganyika. No land had been cleared there, but work had begun in developing the roads and harbors.

It is expected that land-clearing equipment will be used at Kongwa and Urambo for the next 2 years, then it will be gradually moved to the large project at Lindi. A more diversified farming operation, providing for the production of cattle and foodstuffs for the workmen on the project is now being planned. The area of land planted to peanuts will be determined by a number of factors. One is the amount of suitable equipment that is available. Since peanuts can be planted only in December and January, and sunflowers from December through February, the maximum acreage possible would be planted in the first 2 months; and the rest of the land would be planted to sunflowers later. The type of soil will also determine the crop to be planted.



Thus far, the cost of the program has been much higher than originally estimated, and production has been low. Another year of land clearing and experimenting will be necessary before techniques can be tested and progress determined.

Inasmuch as it was estimated that the seed produced in 1949 would be needed to plant the enlarged acreage for the next 2 years, significant exports were not expected in 1950 and 1951. The quantity of oilseeds that can be obtained from this very ambitious project will depend upon the rate at which the land is brought under cultivation. This land-clearing operation, in turn, is subject to the successful development of large-scale, operating techniques that will meet the area's peculiar requirements. Only after years of operations can the response of the soil to tillage and soil-improvement practices, the adaptability of crops to the somewhat variable weather conditions, and the economic feasibility of the project be determined.

### The Union of South Africa

Historically, the Union of South Africa is a net importer of vegetable oils and oilseeds, and an average of about 30,000 short tons of peanuts was imported annually in the prewar period. In 1944, a peak of about 80,000 tons was imported, after which the figure dropped each year until 1948, when it was believed that the domestic production of peanuts would be sufficient to meet the Union's requirements. Imports of palm oil averaged around 20,000 tons per year from 1938 to 1947. Small quantities of linseed, palm kernels, castorbeans, and copra were also imported. Palm oil, copra, and palm kernels were obtained from nearby African areas; and peanuts and flaxseed came primarily from India. Oils and oilseeds from India had not been available to South Africa since the beginning of the war, and, in order to induce greater domestic production, the South African Government supported oilseed prices, particularly of peanuts, at a high level. These support prices for oilseeds stimulated production to the extent that, in 1948, the Union of South Africa was in a position to meet the greater part of its demand for edible oils from domestic production. About 40,000 tons of oilseeds, or the equivalent in oil, was needed in the manufacture of soap. This quantity of palm oil, palm kernel oil, and coconut oil was obtained from nearby areas. The equivalent of 20,000 tons of seed was needed to meet requirements for drying oil; and it was planned to obtain this amount from imports and from 5,000 tons of flaxseed produced domestically. South Africa will probably have considerable quantities of hardened whale oil available for export.

The Union of South Africa has an area about one-seventh that of the United States, and its agriculture has expanded in recent years. Its population was estimated at about 12.5 million, of which 2.5 million were whites, and, with the maximum utilization of resources, a much larger population could be supported. In 1948, only about one-sixth of the potential irrigable area of land was irrigated. Although increasing numbers of tractors were used and one tractor-manufacturing plant was under construction in the Union, the power for farm work was largely provided by oxen or burros.



The production of farmers' stock peanuts in the Union increased from an average of 12,000 short tons before the war to an estimated 69,500 tons for 1948. This estimated 1948 production is equivalent to 50,000 tons of shelled peanuts, approximately 10,000 tons of which would be utilized as food, since peanuts are an important item in the diet of the natives. Two peanut-butter manufacturing plants were in operation, and it was estimated that 35,000 tons of shelled peanuts would be crushed for oil and the remaining 5,000 tons would be used for seed, feed, and home use.

In 1942, when most of the crop was used for direct consumption, the type of peanut grown was similar to the Valencia, grown in the United States. By 1948, approximately half of the acreage was planted to a variety known as Natal, similar to the white Spanish peanut that is also grown in the United States. In some cases, peanuts were produced by methods similar to those used in the United States. Part of the crop was planted with 4-row planters and cultivated with tractors. Although most of the peanuts in the Union were lifted with 1-row diggers drawn by oxen, 2-row tractor-drawn diggers were used in some areas. The peanut plants were generally dried in small stacks and then carried to a stationary picker. Although most of the pickers in use were manufactured in the United States, they were not well adapted to handling the dry crop obtained by the harvesting practices followed in the Union. To increase the effectiveness of these pickers, the Department of Agriculture in the Union advocated the early harvest of peanuts so that they would contain more moisture than was usually present at harvest time.

During the 1948 crop year, peanut prices were supported at 58 pounds, 10 shillings per ton (\$234 United States), shelled basis. Growers found this price more attractive than the support price for corn, which was equivalent to about \$2.20 per 100 pounds, as compared with \$11.70 per 100 pounds for peanuts. The crushers had agreed to pay the same price for the 1949 crop.

About 90 percent of the peanuts were purchased from farmers through a farmer's cooperative. Although peanuts were purchased from farmers in the shelled or unshelled form, the trend was toward shelling peanuts on the farm to reduce storage space requirements and freight charges and to eliminate grading controversies.

Prior to 1946, not more than 35,000 100-pound bags of sunflower seed were brought to market in any one year, but, in 1947, 114,000 bags were delivered. This rapid expansion was brought about by the crusher-farmer contracts for future delivery at the equivalent of \$6.70 per 100 pounds. The insect hazard was such, however, that the Department of Agriculture was not encouraging large-scale production of sunflowers.

Production of flaxseed, a minor crop in South Africa in 1948, was encouraged by Government action in the more humid areas of the Union. Varieties had been introduced from California, Argentina, and Australia, and the total produced was estimated at about 5,000 tons per year.

Attempts were also made to increase the production of castor beans. One variety--a dwarf, spineless type from Hungary that could be harvested with a combine harvester--was being produced by farmers on a commercial scale. Experiments were being conducted with dwarf varieties from the United States also.

There was considerable interest in tung oil; and, although the domestic output was only about 200 or 300 tons annually, tung orchards were being established. Two tung-oil mills were in operation, and the Government had ceased to import tung oil and nuts.

The production of cotton has increased rapidly in recent years. Cottonseed production, which amounted to only 425,000 pounds in 1943, was estimated at approximately 2,250,000 pounds in 1948. This anticipated output was expected to double in 1949.

Butter production was estimated at about 40 million pounds per year. The wholesale price in October 1948 was equivalent to about 50 to 52 cents per pound. The output of margarine was expected to increase from 7 million to about 12 million pounds per year, and the price was subsidized by the Government so that it could be sold for about 27 cents per pound. Since July 1947, four factories had been licensed to manufacture margarine. In order to protect dairy farmers and butter processors, the sale of margarine was controlled and the product was offered in the poorer sections of nine specified areas of the Union. Individuals entitled to receive margarine were registered, and sales were confined to low-income groups.

The local whaling industry produced approximately 8,000 tons of whale oil per year, according to trade sources. Additional whale oil had been purchased from South African shares of the Antarctic production. The South African whaling fleet in the Antarctic produced 20,000 tons of whale oil in 1947, according to trade sources.

Thirteen oil mills in the Union had an annual crushing capacity of 150,000 tons, about 37 percent of which could be used for crushing peanuts. Three crushing plants used the solvent process, but most of the crushing factories used screw-type presses.

The Union has approximately 12 million cattle and 30 million sheep, and its farmers used large quantities of mixed or commercially prepared feed. The quantity of the feed used had increased from 20,000 tons in 1942 to 400,000 tons in 1947. Some undecorticated sunflower seed cake had been exported to the United Kingdom in 1948. The total production of oil cake for domestic use, primarily from peanut and sunflower crops, was expected to be about 35,000 tons. The annual requirement of vegetable oil cake was estimated at about 60,000 tons, together with an additional 20,000 tons of fish meal and tankage. Despite its export of low quality oil cake and meal, South Africa could utilize from 10,000 to 20,000 tons of oil cake from the United States, if the price were competitive with local prices or with copra cake from the Belgian Congo.



## Nigeria

Oilseed and vegetable oil exports normally account for approximately half of the value of Nigeria's total exports: peanuts, palm oil, and palm kernels comprising about 19, 11, and 20 percent, respectively.

In recent years exports of palm kernels from Nigeria have ranged within about 10 percent of 350,000 tons (See table 10.) In 1948, palm oil exports were the greatest in 11 years; and peanut exports, though smaller than in either of the 2 preceding years, amounted to 275,000 tons and were considerably above the average for the 1938-45 period. A larger quantity of sesame seed was exported in 1948 than in any year after 1942, when nearly 25,000 tons were shipped out, but this export was smaller than the quantities shipped in 1938 or 1939.

TABLE 10.--Nigeria: Exports of specified oilseeds and vegetable oils, calendar years, annual 1938-48

Year	Palm kernels	Palm oil	Peanuts, shelled basis	Sesame
	Short tons	Short tons	Short tons	Short tons
1938-----	349,493	123,473	201,752	19,872
1939-----	335,936	141,167	164,935	18,097
1940-----	263,784	148,650	189,818	9,038
1941-----	423,500	143,111	276,837	9,848
1942-----	385,948	169,441	217,493	24,745
1943-----	371,047	151,500	159,613	14,039
1944-----	351,154	139,808	174,937	4,228
1945-----	327,699	127,903	197,391	7,547
1946-----	310,511	112,990	319,948	8,281
1947-----	354,341	141,068	286,570	6,382
1948-----	382,776	184,312	274,530	15,680

Compiled from official and trade sources. Data for the years 1938-47 compiled from records of the Nigerian Department of Commerce and Industries, Lagos, Nigeria. 1948 data estimated.

Nigeria has an area of 373,000 square miles and a population of 22 million, or an average density of 59 persons per square mile. This population is unevenly distributed over the area, with its heaviest concentration in the peanut and palm-oil producing areas. The land is under British control, subject to the disposition of a governor, and it must be held and administered by him for the use and common benefit of the natives. Land use laws vary from one area to another and it is extremely difficult to summarize the policy applicable to land use.



Although trading companies have been anxious to develop large plantations, the British Government has been reluctant to allow this land to be taken away from the natives. Over 99 percent of Nigeria's production of oilseeds comes from small plots farmed by the natives. Peanuts are mainly produced in Kano Province in northern Nigeria. In this area, the average native family farms between 5 and 6 acres, of which 3 to 4 acres is devoted to food crops and the remainder to peanuts. Peanuts are planted from about May 1 to July 15, following the rainy season. In planting, one man goes down the row, making a hole in the soil with either his heel or toe; another follows, dropping the seed; and a third person covers the seed. When the plants appear, they are cultivated with a small hoe having a handle about 1 foot long. There is no further cultivation after the vines spread, and the peanuts are dug with a small hoe and picked from the vines by hand when ready for harvest. When sufficiently dry to shell, the natives beat the peanuts with a stick to crush the shells. The crushed shells and kernels are then pitched into the air, and the wind blows away the shells and the kernels are sifted out. The average yield per acre in this area is about 500 pounds of shelled peanuts.

The British Government has attempted to increase production by demonstrating more efficient farming practices, and the Agriculture Department operated about 130 peanut plots in the Kano area. The first steps had been taken to teach the natives the correct method of spacing the peanuts in the row.

The land used in the cultivation of peanuts is on the down grade in fertility, and fertilizer and a means of controlling wind erosion are needed. For about 3 months of the year, sand blows into the peanut area, and it has been difficult to teach the natives methods of cultivation that would control wind erosion.

The production of peanuts cannot be materially expanded in the Kano area because of the high ratio of the population to the land. There are about 187 people to the square mile in this area; and Guinea corn and millet--the principal foods--are given first priority at planting time.

Because of yearly fluctuations in weather conditions, the total crop of peanuts varies widely from year to year. The total exportable surplus of peanuts from northern Nigeria for the marketing year beginning November 1, 1948, was estimated at about 380,000 tons, shelled basis. In the 1948-49 season, it was estimated that about 336,000 tons of British peanuts would be moved from the Northern territory and about 56,000 tons of peanuts would be moved from the French territory, all of which would, of necessity, come through Nigeria. The output from the Kano area, although available for export, could not all be exported during the 1947-48 crop year because of the inadequate rail facilities between Kano and the port of Lagos. Around the middle of November 1948, 192,000 tons of peanuts from the 1947-48 crop were stacked in pyramids of 600 tons each in the vicinity of Kano, awaiting shipment. During 1947 and 1948, the Colonial Government attempted to get locomotives and cars to move the crop, and some additional equipment had been received and 40 locomotives and 146 cars were

promised for delivery during 1949. With these additional facilities, it was believed that, after 1951, the crop could be moved in the year in which it was produced.

Besides the project in East Africa, the British have surveyed the prospects for developing a mechanized oilseed-production scheme in British West Africa. The study mission recommended the cultivation of 2,750,000 acres, about a third of which would be planted to oilseed each year. During the first 3 years, experiments would be conducted on the Gold Coast and in Nigeria, where 12,000 acres of each area would be set aside for cultivation. The over-all plan envisages a production of 225,000 tons of shelled peanuts per year when the project is fully developed. A revolutionary form of African community is expected to result from mechanized cultivation. The community would be comprised of groups forming "tractor units," and each tractor unit would work a 600-acre plot of hitherto undeveloped land. Ultimately, 200 acres of the plot would be planted to peanuts, 200 to cereals, and 200 to grass ley. The authorities anticipated that tractor units would eventually become communities working on a cooperative basis. Twenty families would be settled on each 400 acres of cultivated land, each family having user rights to a 20-acre holding. The cost of operation would be met by contributions from each farmer.

The program for increasing oilseed and peanut production under this plan had not been completed. In Nigeria, only one area appeared to be suitable for such a development. This area is located in the northwestern section where some of the warring tribes had depopulated the area, and other natives had not moved in. At one time this area produced peanuts and it is thought to be adapted to mechanized production.

Aside from the scheme for developing new areas, plans had been made for increasing the exportable surplus from the area in northeastern Nigeria by the development of more adequate transportation facilities. This plan was advanced by the United African Company, and it advocated the use of shallow river craft in carrying the peanuts from northeastern Nigeria to the port of Burutu, bypassing the over-loaded railroads entirely. This scheme was expected to reduce transportation costs to the ports substantially.

At Kano, the support price to the natives was equivalent to \$69 per short ton of shelled peanuts, as compared with about \$48 in some parts of Sokoto Province. However, even this difference in support prices does not reflect the full variance in transportation costs. In some of the outlying areas in the Sokoto Province, part of this transportation cost was absorbed by the British Government.

Palm oil is produced in the areas south of the Niger and Benue Rivers, primarily along the coastal areas. In the eastern Provinces, most of the oil is produced on small acreages owned by individuals. In the western Provinces, the plots are owned by communities, families, and individuals. Harvesting methods vary from one community to the other, and there is no uniformity in



plans as to the rights to harvest in the area. There were only about 19,600 acres in oil palm plantations.

The estimated Nigerian production and disposition of palm fruits and by-products, 10-year average (1936-37 to 1945-46), is as follows:

	<u>Short tons</u>
Fruit harvested-----	2,250,000
Oil content-----	450,000
Palm oil produced-----	252,000
Oil consumed locally-----	112,000
Oil exported-----	140,000
Kernels exported-----	314,000

About 90 percent of the Nigerian palm oil is produced by the native method of extraction, which recovers only about 55 percent of the oil from the fruit. This is a crude process in which the natives boil the fruit and skim off the oil. The rest of the production, except the oil produced by the plantations and by 4 Pioneer oil mills, is processed by hand presses which squeeze the oil from the fruit after it has been boiled in crude tubs. There were about 1,100 hand presses in the eastern Provinces. Palm kernels are extracted from the palm nut almost entirely by hand, women and children doing the work.

The exportable surplus of palm oil could be increased by further mechanization. The following table shows the calculated exportable surplus that would result from the use of each of the four methods of extraction, assuming an annual production of 2,250,000 tons of fruit with 20 percent oil content.

Extraction method	Extraction ratio	Oil	Exportable Surplus <sup>1/</sup>
	Percent	Short tons	Short tons
Native method-----	55	247,500	137,500
Hand press-----	65	292,500	182,500
Pioneer mill-----	85	382,000	272,000
Factory mill-----	93	418,500	308,699

<sup>1/</sup> Assuming 110,000 tons domestic consumption.

The Nigerian Government officials and trade people were more or less in agreement that the palm oil output could not be increased materially if the extraction methods in use in 1948 were continued. It was also believed that the first and easiest way to increase production would be by mechanization. The



hand press costs about 30 pounds (\$120 United States), and even this amount was a rather large investment for the average native.

The British Government was encouraging the use of the Pioneer mill. Orders had been placed for 44 Pioneer oil mills, 27 of which had been ordered by the British Government. These mills, including the cracking equipment for the recovery of kernels, cost about \$20,000. The Government had 4 of these mills in operation. On an 8-hour shift, each unit processed about 100 tons of fruit per month and about 180 tons per month on a double shift of 16 hours. In fairly thick palm areas, the officials believed they could place these mills to good advantage, each serving an area of a 5-mile radius. The operating record of the Pioneer mill showed that the mill recovered about 10 percent kernels and 19 percent oil from native produced fruit. Assuming 85 percent recovery, this would indicate that the palm fruit processed contained approximately 22 percent palm oil.

Additional quantities of palm oil will be available for export when the industry is further mechanized. More extensive use of machinery will also result in the production of a better quality of oil. Palm oil is graded in Nigeria only on the basis of its free fatty acid content. High fatty acid content indicates low-quality palm oil. The percentage increase in better quality palm oil produced in Nigeria between 1939 and 1947 is shown in the following tabulation:

Palm oil	:	Free fatty acid content	Percentage of total output by grade	
			1939	1947
	:	Percent	Percent	Percent
Grade number:	:			
1-----	:	0 to 9	19.8	60.2
2-----	:	10 to 18	33.7	16.4
3-----	:	19 to 27	13.4	16.1
4-----	:	28 to 36	14.2	6.7
5-----	:	37 and over	18.9	0.6
	:			

Although the quality of the total produced is considerably better than that of the palm oil processed before the war, it is still not suitable for edible purposes. If Nigeria is to compete in the world edible oil market, a palm oil with a free, fatty acid content of less than 5 percent must be produced.

The output of oil from Nigeria could be increased by expanding the acreage of the plantations; and, by plant selection, the oil content of the fruit can be raised to about 30 percent. Available figures indicate that the yield per acre on the plantations was about 1,112 pounds of palm oil and 358 pounds of palm kernels, compared with 185 pounds of palm oil and 235 pounds of palm kernels produced from native groves in the vicinity of Benin City. These estimates assume that the production from plantations was processed on a Pioneer oil mill and that the natural palm fruit was processed by the native method of extraction. Since the number of trees per acre varies from 1 to 90 and the yield per tree and type of fruit vary widely, it must be borne in mind that it is extremely difficult to determine just what an average or typical native grove is.

Except to a limited extent, the British colonial officials had not agreed to allow palm plantations in Nigeria. The research now carried on is designed primarily to determine the best type of operation for the small, 4- or 5-acre native farm. The large-scale peanut (groundnut) scheme in British East Africa and the proposed scheme in West Africa may result, however, in a change of attitude with respect to palm plantations.

Copra is produced in the coastal area between the Dahomey frontier and Tekhi. There are no records of available production. Exports range from 100 to 500 tons per year, since most of the coconuts are used as native food.

Sesame is chiefly grown in Benue Province. About 150,000 acres are planted to sesame, and the individual plots are about one acre in size on the average. The product is brought out by river transport during the rainy season.

In some years, shea nuts and kola nuts are gathered and exported. While the Agriculture Department was experimenting with several other oilseeds, there was no commercial production.

From the outbreak of World War II until September 1942, the Ministry of Food purchased the exportable surplus of West African oilseed at a price agreed upon by the Colonial Office and the West African Government. In 1942, the West African Control Board was established to handle the marketing of oilseeds. It adopted a policy of setting a price designed to insure maximum production yet control domestic inflation, since there was some risk of getting too much money into the area in relation to the quantity of available consumer goods. The oilseeds purchased by the West African Control Board were passed on to the Ministry of Food at cost. When the ceiling prices in the United States were removed and world market prices began to increase, the Board worked out a program with the British Government to increase the price of West African produce. While the Board did not appreciably increase the price to producers, it arranged for an accumulation of the ensuing profits and held these in trust for the people of the producing communities, to be used in stabilizing prices and improving and developing the output in the producing areas.

By 1948, as a result of the purchase and sale of the Nigerian oilseeds, a considerable fund had been accumulated by the West African Control Board. It



was estimated that at the end of the 1948 calendar year palm kernel purchases would yield a profit equivalent to about \$23,253,000 and purchases of palm oil a profit of \$15,717,000. The profit from peanuts purchased in the Kano area in the 1947-48 season was in the neighborhood of \$16,120,000. The estimate of profits from peanuts in the river areas was \$854,000 and that for sesame was \$657,000.

The base price for shelled peanuts to producers increased from the equivalent of about \$43 per short ton in 1945 to about \$54 in 1946. For the season beginning November 5, 1948, the base price was \$69 per ton, with a minimum price of \$48 in the outer areas; and the cost to the Government was about \$102 per ton at port after the freight, buying fees, and other costs had been paid. The Nigerian Government, through the Control Board, sold these nuts to the British Ministry of Food at about \$162 per short ton.

The price of palm kernels at the port in 1948 was about \$75 per short ton, and, for grade 2 palm oil, it was about \$108 per ton.

### The Belgian Congo

The Belgians are attempting to increase the output of vegetable oil in the Congo, primarily by expanding the production of palm oil and palm kernels on oil palm plantations. (See table 11.)

TABLE 11.--Belgian Congo: Exports of specified oilseeds and vegetable oils, calendar years, annual 1938-48

Year	Palm kernels	Palm oil	Palm kernel oil	Peanuts (shelled)	Peanut oil	Cotton- seed oil
	Short tons	Short tons	Short tons	Short tons	Short tons	Short tons
1938-----	97,739	77,443	489	8,423	45	759
1939-----	93,452	79,909	157	6,542	108	1,023
1940-----	49,139	71,781	661	7,290	139	500
1941-----	33,278	66,448	548	7,041	20	205
1942-----	57,843	87,542	5,081	7,805	51	806
1943-----	69,672	109,222	7,541	5,521	11	582
1944-----	62,681	95,737	6,131	4,115	184	845
1945-----	47,948	85,886	8,583	3,000	3,708	700
1946-----	57,170	96,658	10,018	73	2,662	1,590
1947-----	53,013	93,624	12,242	508	3,243	2,013
1948-----	91,904	121,680	19,403	2/	1/ 3,500	1/ 600

1/ Estimated.

2/ Not available.

Compiled from official and other sources.



As shown in table 11, the 1948 palm kernel export level had not equalled the 1938 and 1939 levels. However, the level of exports of palm oil and palm kernel oil in 1948 was the highest in 11 years. Exports of shelled peanuts had not returned to either prewar or wartime levels because the larger domestic crushing capacity resulted in increased exports of peanut oil. In 1948, cottonseed oil exports were estimated at two-thirds of those of the preceding year.

The Belgian Congo has an area that is about one-third that of the United States and about 88 times as large as that of Belgium. Its economy, which is almost entirely dependent upon its foreign trade, is handicapped by an inadequate transportation system. The Congo River is not navigable all the way to the sea, and the railroad system that provides the connecting link is overloaded.

The Belgian Government has followed a policy of granting concessions to private companies, enabling them to establish palm plantations and develop oil industries. These companies were given land concessions, and they agreed to provide schools, medical aid, social services, and food to the natives at minimum costs in return. The Belgian Government in Brussels decides questions of policy, but details of operations are worked out by the Colonial Office at Leopoldville. This policy of granting land concessions has resulted in a large acreage of oil palm plantations.

In 1938, about 128,000 acres of the Congo's palm plantations were operated by European plantation operators and about 26,000 acres were operated by natives. By 1948, the area in European plantations had increased to 248,000 acres, of which 94,000 acres were in young trees not then producing. In addition, over 600,000 acres contained a large number of wild palm trees, and natives were operating an estimated 111,000 acres in 1948. These wild palm trees grow throughout the Belgian Congo, but they are chiefly centered in two belts. One belt on the west coast runs about 150 miles inland to Leopoldville, and the second extends from 185 to 750 miles inland.

About 80 to 85 percent of the palm oil of the Belgian Congo is produced in the Provinces of Leopoldville and Coquilhatville. The Kongwa district, centered in Leverville, is chiefly operated by Huilever du Congo Belge, the largest plantation operator in the Congo. This company began developing palm plantations in 1911 and now produces over half of the Congo's output of palm oil. In 1948, it operated 17 crushing mills in the Belgian Congo.

The total production of palm oil in the Congo is not known, but approximately 149,000 tons were produced in 1947 for commercial use, of which 94,000 tons were exported (See table 11.). In 1948, the commercial production was approximately 165,000 tons, and approximately 122,000 tons were exported. About half of the total was produced from plantation-grown fruit. In addition

to the commercial plantations, there is an experimental plantation at Yangambi that has about 50,000 trees. All of the seed used in the Belgian Congo is produced on this plantation which also contributes around 1,100 tons of palm oil annually.

By 1952 or 1953, the production of palm oil in the Belgian Congo is expected to approximate 276,000 tons per year. About 165,000 tons of this is to come from European plantations and approximately 110,000 tons from the native palm groves. By 1958, the annual production is expected to be 385,000 tons. The commercial production of palm oil that is not exported is used mainly in the manufacture of soap; and, in 1947, 25,000 tons of soap was manufactured, more than 9,000 tons of which was exported. Some palm oil is used in the native diet and as rations for miners, and some is used in the treatment of copper ores.

In recent years, practically all of the edible palm oil produced in the Belgian Congo that contained less than 5.2 percent free fatty acid has been exported to Belgium at a relatively low price, and the remainder has been sold in the open market. Of approximately 122,000 short tons of edible and inedible palm oil exported in 1948, about 60,000 tons were shipped to Belgium; 28,000, to the United States; 13,000 tons, to the Union of South Africa; and the remainder went to European countries.

In 1947, the commercial production of palm kernels approximated 110,000 short tons. The output of palm kernels will not increase proportionately with that of palm oils because a larger portion of the production will come from plantations growing a fruit that contains a higher percentage weight of palm oil and a lower proportion of palm kernels. The oil content of palm fruit produced on the plantations is about 25 to 30 percent of the total weight of the fruit, and kernels represent about 7 percent of the total weight. The native palm fruit contains about 20 to 23 percent oil, by weight, and from 10 to 12 percent kernels.

The Belgians believe that the best method of increasing palm oil and palm kernel production is to expand the plantation system of operation. It is also believed that the native production of oils and kernels could be increased somewhat by raising the level of prices paid to the natives.

There is a trend toward processing palm kernels in the Congo and exporting this oil. The prewar annual export of about 95,000 tons dropped to 55,000 tons during the war and increased to 92,000 tons in 1948. Exports of palm-kernel oil, however, increased from 157 tons in 1939 to approximately 19,000 tons in 1948. In part, the increased processing rate in the Colony is due to an increase in numbers of cattle in the eastern Provinces and to the demand for palm cake for feeding these cattle. Actually, some of the palm oil and palm-kernel oil that is exported is needed in the Colony, but the oil comes primarily from the southwestern Provinces and the freight rates are so high that it is not economic to send it to deficit areas.



Cotton is another cash crop that is important to the natives of the Belgian Congo. Over 700,000 people are engaged in the production of cotton, primarily in the eastern Provinces where it is about equally divided between the northern and southern areas. The production of cottonseed, which amounted to about 93,000 short tons just prior to the war, increased to 143,000 tons in 1947.

Cottonseed, as such, is not exported. It is first crushed, and the oil and cake are sold. In recent years, there has been an increase in the number of crushing plants in the Congo; but the crushing capacity has not been adequate to process all the seed produced. New plants that were being built in 1948 would about double the production of cottonseed oil in the Congo. During the war, less than 900 tons of cottonseed oil was exported annually.

The total harvest of peanuts in the Congo is not known, but it was estimated that, in 1946, peanuts were sown on about 550 acres of the plantations owned by Europeans and about 533,500 acres of the native farms. In 1948, the European plantings probably totaled about 2,100 acres and the native plantings 568,800 acres.

Peanuts are grown in the Congo almost entirely for native consumption as food. An experimental plantation of about 1,000 acres was established to determine the feasibility of producing peanuts on plantations, but even this is primarily operated for the purpose of supplying food for the natives. This project was being handled by Huilever; but, if it proves successful, similar projects would, no doubt, be put into operation by other firms.

The commercial production of peanuts in the Congo in 1947 amounted to 30,400 tons. Since the beginning of World War II, exports of peanuts from this region have declined while exports of peanut oil have gradually increased. (See table 11.) It is not likely, however, that exports of either peanuts or peanut oil will increase to any great extent in the near future.

The castor bean (Racin viendes) is indigenous to the eastern Congo and Ruanda-Urundi, where the plant grows wild. The natives use the oil for dressing the hair, for body oil, and as lamp fuel. In 1947, the production of this crop in Ruanda-Urundi was estimated at 5,500 tons. There were two castor oil mills in the area--one at Katanga and one in Ruanda-Urundi. In 1946, 64 tons of beans and 319 tons of castor oil were exported, and, in 1947, 214 tons of castor oil, but no beans, were exported.

Sesame is produced by the natives, and the 1947 crop was estimated at 2,700 tons. In 1946, 558 short tons of sesame were exported, but there was no export of sesame oil in that year. In 1947, 121 tons of sesame and 36 tons of sesame oil were exported; and, in 1948, the entire crop was exported to Belgium, since there is little interest in sesame among the processors of the Congo.



The coconut palm has been introduced into the Congo from the Far East, but no effort is being made to expand production. The fruit is used by the natives principally as a food delicacy and as a source of fiber for mats. There is no commercial production of copra.

The Government exercises control over the marketing of palm oils and kernels through an organization, la Cooperative des Productuer et Exporter D'Huile de Palm de Congo Belge, called "Congopalm," which began operating on July 1, 1948. The minimum registered capital stock of the company is fixed at 10,000,000 B. C. francs divided into shares of 50,000 francs each. The purpose of Congopalm, which is made up of 25 different companies, is to conduct all operations relating to the production and commerce of palm oil, as well as the commercial, financial, industrial, and real estate operations bearing directly or indirectly upon these functions. Over half of Congopalm's stock is held by Huilever.

An organization, "Contonaca," controls the marketing of cotton and cottonseed under an arrangement with the Belgian Government. This organization had two oil mills in the Belgian Congo and was building three more for operation in 1949. Its headquarters is located in Brussels.

#### French Equatorial Africa

Palm oil and kernels are the principal oil and oilseed exports from French Equatorial Africa. These exports declined during the war and had not yet returned to prewar levels, as is shown by the data contained in the following tabulation:

Year	:	Palm oil	:	Palm kernels
	:		:	
	:	<u>Short tons</u>	:	<u>Short tons</u>
	:		:	
1938-----	:	7,180	:	16,520
1945-----	:	1,347	:	6,336
1946-----	:	1,490	:	8,392
1947-----	:	2,837	:	10,261
1948-----	: 1/	3,050	: 1/	8,900
	:		:	

1/ Estimated.

Compiled from official and trade sources.

From the standpoint of land and palm trees, the capacity for producing these commodities exists, but there is little desire on the part of the natives for this activity. The area is sparsely populated; and many of the natives, who have moved into the towns, have no inclination to resume farm operations and little desire to acquire French francs. In the case of palm oil, three operating companies were allocated dollar currency to provide an incentive for delivery of oil. These dollars were used to buy cloth for trading with the natives for palm oil and kernels collected principally from wild trees. Only one firm operated a plantation and it produced about 1,100 tons of palm oil annually.

The French Government's palm-oil research station at Sabiti covers 494 acres, and it is believed that 22,000 tons will be produced there each year. One private firm plans to produce 7,700 tons of palm oil annually. However, these plantations will not come into normal production for at least 10 years.

The cotton crop of French Equatorial Africa has increased, but it is not economically feasible to export the cottonseed because the freight cost from the area of production to port is approximately \$54 per short ton.

The French Government has developed a plan for increasing the production of peanuts by plantations which is similar to that for promoting the output of palm products, but it is extremely doubtful that these projects will increase the exportable surplus from the area because of the sparse population. Some native labor had been imported, and it appeared that it might be necessary to provide incentives in the form of goods or by the use of English pounds or United States dollars as a medium of exchange.

### Angola

Exports of vegetable oil and oilseeds from Angola consist of palm oil, palm kernels, peanuts, sesame, and castor beans, with palm oils and kernels accounting for the bulk of the trade (See table 12). Within the past two decades, exports of palm oil have quadrupled; and those of palm kernels, peanuts, and sesame have more than doubled. While the exportation of castor beans began more recently, the trade in this oilseed exceeded that of both peanuts and sesame in 1946 and 1947. Practically all of the exportable oilseed is taken by Portugal.

The Territory of Angola has an area of 487,788 square miles, with approximately 1,000 miles of coast line, and is controlled by the Portuguese. It has two principal ports and several small ports along the coast. Its population is made up of approximately 44,000 whites, 23,000 of mixed races, 24,000 civilized natives and 3,600,000 so-called "uncivilized" natives.

There has been little development of Angola's resources, and investment of foreign capital has apparently been discouraged. The development that has taken place has come about on the basis of rather large land concessions to



Portuguese nationals to whom land is made available in blocks of not less than 12,500 acres for cultivation or 125,000 acres for grazing purposes. The individual or company settling on these blocks of land must pay the cost of land demarkation and a small rent. Later, when the land is developed, a title to the land is granted. The labor used on these plantations must be obtained through the labor office, and the laborers must be furnished with shelter, a blanket, a straw mattress, and a certain quantity of rice or mealies. The natives are forced to work 6 months each year, and, if they can not prove that they have worked this period for private companies, they are conscripted to work 6 months for the Government.

TABLE 12.--Angola: Exports of specified oilseeds and vegetable oils, average 1932-36, 1937-41, and 1942-46, annual 1946-48

Oilseed or vegetable oil	Average			Annual		
	1932-36	1937-41	1942-46	1946 <sup>1/</sup>	1947 <sup>1/</sup>	1948
	<u>Short</u> <u>tons</u>	<u>Short</u> <u>tons</u>	<u>Short</u> <u>tons</u>	<u>Short</u> <u>tons</u>	<u>Short</u> <u>tons</u>	<u>Short</u> <u>tons</u>
Palm oil-----	3,260	4,490	8,654	16,716	13,646	13,228
Palm kernels--	6,240	6,856	10,146	14,309	15,374	15,432
Peanuts----- <sup>2/</sup>		536	565	938	1,308	<sup>3/</sup>
Sesame-----	309	775	1,013	1,161	846	<sup>3/</sup>

<sup>1/</sup> Exports of castor beans were 9,634 and 4,826 short tons in 1946 and 1947, respectively.

<sup>2/</sup> Not available.

<sup>3/</sup> In November 1948, exports of sesame from Angola were prohibited, and exports of peanuts were limited to 50 percent of the commercial production in order to supply the local population and the fish packers with oil. The local mills had been unable to compete on a price basis in the open market.

Compiled from official and other sources.

The area that produces palm oil is situated between the mountains and the coast line, principally along the banks of the Lucala, Congo, and Cuanza rivers. There were about 23,700 acres of palm plantations operated by Europeans, and wild palms were growing in the northern half of the coastal plain. The wild palm fruit was gathered by the natives, who consumed most of it. The commercial production of palm oil in 1948 amounted to about 35,274 short tons, approximately one-third of which was exported. The production and export of palm kernels for 1948 was estimated at 15,400 short tons.

In 1920, Angola exported 65 short tons of peanuts. By 1939, exports had



increased to 660 tons, and 1,308 tons were exported in 1947. Peanuts are produced almost entirely by the native population. Since the peanuts are primarily used for food, there are few available statistics on peanut acreage and production. In 1942, a survey of the commercial production in the Colony was made, and, at that time, this production was estimated at 5,900 short tons. The area sown to peanuts in 1948 was estimated at 21,000 acres and the production at 5,500 tons. A project for the production of an additional 33,100 short tons of peanuts on plantations was under discussion in Angola. This increased tonnage could have been produced easily without disrupting the production of other crops, but, since the flow of outside capital into the Colony is not encouraged, it is unlikely that the project will come into existence in the near future.

In 1948, it was estimated that castor beans were cultivated on 10,100 acres and that approximately 11,000 short tons would be produced. There has been an increase in the plantation planting of castor beans, the production of which is carried on largely by natives. By 1952, Angola's crop of castor beans is expected to increase to approximately 14,300 tons.

In 1948, an estimated 4,900 acres of sesame were under cultivation and it was believed that 2,756 short tons would be produced. This crop is grown almost entirely by the native population.

In marketing oilseeds, the products were purchased from the natives by small traders and transported to the ports for export. Salt has been used to a large extent as the medium of exchange in peanut trading, but traders have also used rice, print goods, and kerosene in some cases. There were seven peanut-crushing mills and two castor-oil producing plants in Angola.

### French West Africa

Peanuts, palm kernels, and peanut and palm oil are the principal oilseeds and oils exported from French West Africa. Although exports of peanuts had increased for the third successive year in 1948, they were still but little over half as great as they were in 1938 and 1939. (See table 13.) Shipments of peanut oil, however, reached their highest point in 1948. Exports of palm kernels were the largest since 1938; and the volume of palm oil exports in 1948 was probably nearly equal to that of 1944.

In addition to the products shown in table 13, exports of copra totaled 743 short tons in 1945, 132 tons in 1946, and 1,068 tons in 1947. Exports for 1948 were estimated at between 800 and 1,000 tons.

The total area of the French West African Colonies is approximately 1,800,000 square miles, with an average of about 9 persons per square mile. Peanuts are the most important export crop of French West Africa. Senegal Colony is the most important producer of peanuts, and its total production and exports exceed the combined total of the other colonies. Peanuts are also produced in the regions of Upper Guinea, Sudan, Upper Dahomey, Niger,

and Togo. The population density in these colonies is about 22 persons per square mile and, under the existing method of production, this is a limiting factor. Since the area is too thinly populated to provide an adequate supply of labor, the production of peanuts varies to some extent with the number of transient workers that come into the territory.

TABLE 13.--French West Africa: Exports of specified oilseeds and vegetable oils, calendar year, annual 1938-48

Year	Peanuts (shelled basis)	Peanut oil	Palm kernels	Palm oil
	Short tons	Short tons	Short tons	Short tons
1938-----	593,300	6,300	78,000	15,100
1939-----	611,300	5,800	60,800	14,800
1940-----	386,400	14,600	56,900	13,200
1941-----	387,600	26,400	51,200	17,300
1942-----	89,800	12,100	45,900	8,600
1943-----	12,900	21,400	5,566	8,600
1944-----	129,000	30,700	55,200	11,700
1945-----	104,500	37,500	51,000	5,300
1946-----	187,500	39,500	39,000	800
1947-----	211,800	39,600	44,100	785
1948 <u>1</u> /-----	325,900	41,290	<u>2</u> / 64,716	<u>2</u> / 9,340

1/ Preliminary.

2/ Eleven months only.

Compiled from data published in Fr. Annuaire Statistique 260 An. 7, 1938-45, and Bulletin Mensuel De Statistique D'Outre-Mer 260 St. 223B, 1946-48.

The production of peanuts in French West Africa declined from an average of 875,900 short tons in the years 1935-39 to approximately 351,300 tons in 1944. Since 1944, the tonnage has increased each year to an estimated 810,000 tons for 1948.

Peanuts are planted in Senegal in late June. The rains begin in June and end in mid-October, August being the month with the greatest quantity of rainfall. The most primitive method of cultivation still prevails in French West Africa. After hand sorting, the seeds are planted by the native farmer, who uses a simple hoe to open the soil. His family follows him, dropping the seeds into small openings in the ground and pushing the soil over the seed with their feet. Other work, such as weeding, is done with a light spade. The



average acreage in peanuts, per family, is about 2.5 acres. Little fertilizer is used, and the land is permitted to lie fallow, usually after its fertility is depleted. After the last rains in mid-October, the plants are dug and left to dry for a short time. In Senegal, most of the peanuts are dug and sent to market in the shell, but in other colonies they are shelled before marketing in order to reduce transportation costs.

The French West African production of peanuts could be increased by the use of machinery. The soil in the old peanut-producing area is rather badly eroded, but there is plenty of new land that could be cultivated. In the old peanut-producing area, an increase of about 10 percent in production is all that can be expected.

The Government controls the conditions of trade, limits the season, and inspects and maintains standards of crop quality. The marketing season is one of great activity. The natives rent camels and donkeys to transport the harvest to marketing centers. French West African inspectors are posted at strategic points on the roads to check the quality of the peanuts. When the peanuts pass inspection the owner sells his lot to a wholesaler. The Government also determines how much of the crop will be processed in French West Africa, the total to be exported to France in the form of peanuts, the price, and the final destination of peanuts and peanut products. From the 1946-47 harvest, 110,000 short tons of peanuts were sold to crushers in Senegal. About 35,000 tons of peanuts from the 1948 crop were allocated to crushing plants in North Africa, 154,000 tons to those in French West Africa; and the remainder to plants in France. The products derived from about 33,000 tons of peanuts crushed in the Colony were allotted for domestic use and the remainder was to be exported.

Only about 15,000 tons of peanut oil were produced in French West Africa and North Africa in prewar years, compared with about 80,000 tons in 1947. The authorized exports to France from the Colonies during the prewar period amounted to 5,800 tons, as compared with about 48,000 tons in 1948.

Although the support price for peanuts in 1947 was not equal to world market prices, the French Government was not accumulating a monetary reserve as was the case in British territory. The only reserve maintained by the French Colonies was one to equalize freight rates. In 1947, the support price was the same all over the territory; and it was expected that the support price for the 1948-49 crop year would be adjusted to allow for freight to port. In mid-November 1948, the Government had not fixed a price to be paid for peanuts from the 1948-49 crop. The price paid the producer was 12.50 CFA francs per kilo (\$90.00 per short ton, converted at the official rate of exchange) as compared with the 1946-47 crop price of 7 CFA francs (\$50.00 per ton).

A scheme for producing peanuts by mechanized methods in French West Africa had been launched by the French Government, and two separate projects--one at Casamance and the other at Kaffrine--were being developed. The project at Casamance was expected to be the more successful one, since its climate and soil are better adapted to peanut cultivation. Each plantation under these

projects will be comprised of 24,700 acres, and all will be farmed by tractor. It was hoped that they could eventually operate as cooperatives. About 500 native laborers, 3 overseers, and 7 white-collar workers will be employed on each plantation, and the calculated yield was from 1,700 to 2,200 pounds per acre, as compared with a yield of 600 pounds per acre in the past. This anticipated increase, if realized, would result from the use of proper quantities of fertilizer and more regular cultivation practices under the plantation set-up. The projects are to be operated under the direction of the French Government and its State company that has a capital of 300,000,000 francs. Ninety percent of this capital was supplied by the Government, 5 percent by the peanut trade, and 5 percent by commercial banks. The State company would rent the land to operating companies, financed 90 percent by private capital and 10 percent by capital supplied by the Government. The crop yields would be marketed in conformance with Government regulations. While all operating details had not been worked out, it was thought that about 25 percent of the crop would remain in the village of origin and about 75 percent would be exported to France.

The French hoped to obtain both operational and land-clearing equipment needed on these projects from the United States. The larger project at Casamance is to cover about 494,000 acres. The initial equipment arrived about August 30, 1948, and consisted of 7 heavy tractors from the United States. Eleven other heavier tractors had been ordered from the United States and 22 were to be ordered in 1949 on ECA credit. It was anticipated that some land would be ready for planting in 1949 but that the first large acreage would be planted in 1950. A 988-acre experimental block, using small American-made equipment, was in operation at Kaffrine.

Palm products are produced principally in Guinea, the Ivory Coast, and Dahomey. Palm oil is largely extracted by native methods from fruit gathered from the native groves. The French Government planned to increase this output by erecting eight palm oil factories on the African coast, each to have an annual capacity of from 1,000 to 4,000 tons and the total capacity to be 16,000 tons. This was expected to raise the total, annual Colonial capacity for palm oil production to around 40,000 tons in about 3 years and to about 80,000 tons in 5 years. Of the eight, three factories are to be located in Dahomey, two in the Cameroons, one on the Ivory Coast, one in Togo, and one in French East Africa. Five plants were under construction and one was to begin operations in 1949. The plants were financed by the Fonds de Investissement pour Developement Economique et Social des Territoires d'Outremer.

When completed, these plants will be leased to private operators. Government officials in France held the opinion that these plants would increase the production of palm oil by about 100 percent. The factories recover about 90 percent of the palm oil, as compared with about 55 to 60 percent recovered by native methods of extraction. The use of these plants would relieve the labor shortage that prevails in most of the French colonies, and the natives could allot more of their time to gathering palm fruit.



The French are placing great emphasis on more efficient operation of native palm groves, since large tracts of land cannot be taken away from the natives. Eventually, they hope to convince the natives that it is more profitable to operate plantations. An annual production of 130,000 tons of palm oil is envisaged in the 10-year plan of the French Government.

### Liberia

Liberia has an area of approximately 300,000 square miles and a population of about 2.5 million people. Its rainfall ranges from 60 to 150 inches per year, and its land and the possibilities for developing the production of palm oil and cocoa are good.

Palm kernel exports in 1948 were estimated at 16,800 tons, compared with 4,412 tons shipped out in 1947. Palm oil exports for 1948 were estimated at 3,150 tons, compared with 1,237 in the previous year.

It is believed that only about 10 percent of the palm oil and palm kernels are actually collected from the native groves. There has been no stable market for these products, and the natives have little incentive to produce. American dollars are the principal medium of exchange used, but, because of its low quality, there is no demand for Liberian palm oil among American purchasers. European buyers cannot stay in the market because of shortages of dollar exchange.

The only palm-plantation operations in Liberia consist of about 200 acres owned by the Firestone Rubber Company and a few acres owned by the George Washington Carver Institute of Learning. The Firestone Rubber Company, according to reports, intends to increase its plantings to about 500 acres; and the Institute hopes to encourage the development of small plantations by the natives. The Firestone Rubber Company is producing palm oil for the use of natives working on its rubber plantations and there is no intention of exporting the product.

An American firm, the Liberian Company, has made plans to develop the palm production of Liberia. The Unilever Company, a British firm, is already buying products in the area and plans to increase production and exports. The Liberian Government will make land concessions for plantations, provided that a part of the profits derived from these operations are used to develop the country.

Liberia has never exported large quantities of oilseeds, and it is not likely that the natives will produce a quality product without outside supervision.





